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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/828,068	04/06/2001	Yong-Hwan Moon	18941001400	7267

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EXAMINER	
BAUM, STUART F	

ART UNIT	PAPER NUMBER
1638	

DATE MAILED: 04/19/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)	
	09/828,068	MOON ET AL.	
	Examiner	Art Unit	
	Stuart F. Baum	1638	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *23 September 2004*.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *7,14,16,20,22-25 and 27-30* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *7,14,16,20,22-25 and 27-30* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☒ The drawing(s) filed on *19 May 2003* is/are: a)☒ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____.
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: _____.

DETAILED ACTION

1. The amendment filed 9/23/2004 have been entered.

2. Claims 7, 14, 16, 20, 22-25, and 27-30, including SEQ ID NO:1 are pending and are examined in the present office action.

3. The indicated allowability of claims 7, 14, 16, 20, 22-25, and 27-30 is withdrawn in view of the newly discovered reference(s) to Hirochika et al (filed 11/22/2000, U.S. Patent 6,984,727 B1). Rejections based on the newly cited reference(s) follow.

Double Patenting

4. Applicant is advised that should claim 22 be found allowable, claim 25 will be objected to under 37 CFR 1.75 as being a substantial duplicate thereof. When two claims in an application are duplicates or else are so close in content that they both cover the same thing, despite a slight difference in wording, it is proper after allowing one claim to object to the other as being a substantial duplicate of the allowed claim. See MPEP § 706.03(k).

New Matter

The following is a quotation of the first paragraph of 35 U.S.C. 112:

> The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same and shall set forth the best mode contemplated by the inventor of carrying out his invention.

5. Claims 7, 14, 20, 23, 27, and 29 are rejected under 35 U.S.C. 112, first paragraph, as failing to comply with the written description requirement. The claim(s) contains subject matter which was not described in the specification in such a way as to reasonably convey to one skilled

in the relevant art that the inventor(s), at the time the application was filed, had possession of the claimed invention.

The claims have been amended to recite "having at least 95% sequence identity to SEQ ID NO:1". In the amendment filed 9/23/2004, Applicants point to page 14, lines 21-22 and page 5, line 31 in the specification for support, but no support is found at that location. Applicants fail to point to support for the phrase in the instant specification. Applicants are required to point to support for "having at least 95% sequence identity to SEQ ID NO:1" or to amend the claims to delete the NEW MATTER.

Claim Rejections - 35 USC § 102

> (e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

6. Claims 7, 22, and 25 are rejected under 35 U.S.C. 102(e) as being anticipated by Hirochika et al (2000, U.S. Patent 6,984,727 B1).

The claims are drawn to an isolated nucleic molecule comprising a polynucleotide having at least 95% sequence identity to SEQ ID NO:1, or wherein the isolated nucleic acid comprises SEQ ID NO:1.

Hirochika et al disclose a nucleotide sequence of SEQ ID NO:1 which exhibits 99.7% sequence identity with Applicants' SEQ ID NO:1 (sequence listing and see attached sequence search result). The Office contends that the sequence of Hirochika et al is in fact the same sequence as Applicants' SEQ ID NO:1 because both sequences were isolated from rice (see page 224, lines 14-18 of the instant application and the sequence listing from the instant application and the Hirochika et al patent) and there is only a two base pair difference between Applicants'

SEQ ID NO:1 and Hirochika et al SEQ ID NO:1; a two base difference out of a total of 3896 bases. The differences are at positions 203 and 3708 and the Office contends the differences are due to sequencing errors. Therefore, SEQ ID NO:1 from Hirochika et al exhibits 100% identity with Applicants' SEQ ID NO:1, and as such, Hirochika et al anticipate the claimed invention.

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

7. Claims 7, 14, 16, 20, 22-25, and 27-30 are rejected under 35 U.S.C. 103(a) as being unpatentable over Hirochika et al (2000, U.S. Patent 6,984,727 B1).

The claims are drawn to an isolated nucleic molecule comprising a polynucleotide having at least 95% sequence identity to SEQ ID NO:1, or wherein the isolated nucleic acid comprises SEQ ID NO:1, or a method of decreasing flowering time in a plant comprising introducing into the plant an expression cassette comprising a plant promoter operably linked to a polynucleotide having at least 95% sequence identity to SEQ ID NO:1, wherein the introduced nucleic acid sequence is transcribed resulting in an earlier flowering time when compared to a plant not transcribing the nucleic acid sequence, or wherein the polynucleotide comprises SEQ ID NO:1, or an expression cassette comprising a promoter operably linked to a nucleic acid sequence

having at least 95% sequence identity to SEQ ID NO:1, or wherein the nucleic acid comprises SEQ ID NO:1, or transgenic plant comprising said expression cassette.

The teachings of Hirochika et al have been discussed above.

Hirochika et al do not teach a method of decreasing flowering time comprising introducing an expression cassette into a plant, or an expression cassette comprising a promoter operably linked to a nucleic acid sequence having at least 95% sequence identity to SEQ ID NO:1, or wherein the nucleic acid comprises SEQ ID NO:1, or transgenic plant comprising said expression cassette.

Hirochika et al teach a rice plant in which a nucleic acid comprising SEQ ID NO:1 is mutated using a retrotransposon (paragraph bridging columns 1 and 2; columns 4 and 5, Example 1). Hirochika et al teach a mutant rice plant generated by the activation of the retrotransposon and as a result, a plant line exhibiting dwarfism, upright form, and malformation of grain hulls (column 5, Example 3). Hirochika et al disclose the function of the mutated gene is its involvement in signal transduction of brassinosteroid (paragraph bridging columns 6 and 7). Hirochika et al disclose their invention relates to methods for controlling various effects in plants in which brassinosteroid hormone is involved, e.g., growth promotion, yield increase, quality improvement, and maturation enhancement (column 2, lines 23-28).

Given the recognition of those of ordinary skill in the art of the value of producing a plant with a modified phenotype as taught by Hirochika et al, and the value of modifying the expression of SEQ ID NO:1 as taught by Hirochika et al for the purpose of "maturation enhancement" as discussed above. One of ordinary skill in the art would know that the expression of a gene can be modified using any number of molecular biological techniques. For

example, co-suppression. One of ordinary skill in the art knows that co-suppression is a common technique used to down-regulate genes. Given the teachings of Hirochika et al that SEQ ID NO:1 is involved in brassinosteroid signal transduction, and given the observation of Hirochika et al that rice plants having a disrupted expression of SEQ ID NO:1 are dwarf, and given the teachings of Hirochika et al that SEQ ID NO:1 is involved in maturation enhancement and that the time to flowering is a maturation process, one of ordinary skill in the art would be motivated by the disclosure of Hirochika et al to co-suppress SEQ ID NO:1 for the purpose of disrupting the normal maturation process of plants so as to produce a plant that exhibits early flowering. Given said teachings, one of ordinary skill in the art would be motivated to produce an expression cassette comprising SEQ ID NO:1 to be used in the claimed method.

Thus the claimed invention would have been *prima facie* obvious as a whole to one of ordinary skill in the art at the time it was made, especially in the absence of evidence to the contrary.

8. No claims are allowed.

9. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Stuart F. Baum whose telephone number is 571-272-0792. The examiner can normally be reached on M-F 8:30-5:00.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Anne Marie Grunberg can be reached at 571-272-0975. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is 571-272-1600.

Stuart F. Baum Ph.D.
Patent Examiner
Art Unit 1638
April 10, 2006

STUART F. BAUM, PH.D.
PATENT EXAMINER